

REMARKS

Status of the Claims

Claims 1-21 are pending. Claims 1 and 16 are currently amended. Support for the claims can be found in the Specification, including on pages 4, lines 1-22, page 6, lines 1-10, and page 13, paragraph 9-14. No new matter is added in the above amendment.

New Title

The Office Action requested a new title. The title suggested by the Examiner is incorporated in the above amendment.

Drawing Objections

The drawings are objected to under 37 C.F.R. 1.83 for allegedly not showing every feature of the claims. This objection is respectfully traversed.

The Office Action states that “the object tracking must be shown or the feature(s) must be canceled from the claim(s).” See page 2 of the Office Action.

35 U.S.C. § 113 states that “[t]he applicant shall furnish a drawing where necessary for the understanding of the subject matter sought to be patented.” Accordingly, drawings are not necessary if the subject matter can be understood without them. M.P.E.P. § 601.01(f) states that “it has been USPTO practice to treat an application that contains at least one process or method claim as an application for which a drawing is not necessary for an understanding under 35 U.S.C. § 113.”

The instant claims are method claims.

Further, it stands to reason that if a drawing is not required under 35 U.S.C. § 113, then any drawings that appear should not be objected to for allegedly failing to show that every feature of the claim.

The Office Action relies on USPTO Form Paragraph 6.22.01, Drawings Objected To, Details Not Shown, part of which is repeated below:

The drawings are objected to under 37 CFR 1.83(a) because they fail to show [1] as described in the specification. ***Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing.*** MPEP § 608.02(d). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. (Emphasis added).

Further, the following is the Examiner note associated with bracket [1]:

Examiner Note

1. In bracket 1, identify the structural details not shown in the drawings.

However, the Office Action improperly redacts the sentence that is emphasized above. Further, the Office Action fails to explain any of the *structural* details not shown in the drawings.

Based on 35 U.S.C. § 113, based on the nature of the claimed methods, and based on the fact that the form paragraph relied upon in the Office Action in the attempt to require the drawing corrections is intended for use in connection with *product claim structure*, it is clear that the objection in this instance is not proper.

Accordingly, Applicants respectfully submit that this objection be withdrawn.

Issues Under 35 U.S.C. § 102

Claims 1-5, 7-8, and 11-16 are rejected under 35 U.S.C. § 102 as allegedly being anticipated by Jain et al., US Patent No. 5,983,237. This rejection is respectfully traversed. Reconsideration and withdrawal thereof are requested. However, in view of the above Amendment, this rejection is moot.

The Jain et al. patent discloses a system and method for allegedly improving the retrieval performance of a query engine in a visual information retrieval. With respect to claim 1, Jain et al. fail to disclose the use of vectors, with each vector having a descriptor representing a co-variant region of the object. In the method of the present invention, clustering of the vectors is performed in relation to the descriptors.

In contrast, the vectors used in Jain et al. do not include descriptors and vector clustering is not, therefore, performed in relation to them. Page 6 of the specification states that the descriptor is a 2^7 dimensional vector which represents an affine invariant region, the implementation of the descriptor being known in the prior art. Therefore, the term 'descriptor' as used in claim 1 is a specific, technical term known to one of ordinary skill in the art in object recognition and retrieval. The Examiner, however, points to column 10 line 16 of Jain which states that a 'feature vector describes a visual object'. However, the adjective 'describes' is used in Jain in a generic sense and cannot be equated with the noun 'descriptor' as used in Claim 1. Furthermore, the invention in Jain does not feature the representation of co-variant regions of objects.

With respect to independent claim 16, the claimed method features associating a plurality of 'visual aspects' with each object in a moving picture, retrieving the 'visual aspects' associated

with the user-specified object (i.e. the object to be searched for) and matching them with those in the moving picture so as to identify the object within the moving picture. The 'visual aspects' of claim 16 relate to the viewpoint (i.e. perspective or orientation) of the image rather than the appearance of the object itself. Page 4 of the supporting specification includes 'front, back and side views' as examples of 'visual aspects', and promotes their use in providing a means of orientation invariant searching.

In contrast, Jain et al. fail to address the identification or matching of 'visual aspects'. The 'visual senses' referred to in Jain et al. are 'specific visual appearance[s] that the term may take in a picture' (column 10, line 8). A 'visual sense' in Jain is represented by one or more feature vectors, each feature vector comprising a plurality of visual features. In turn, a visual feature is 'any property of an image that can be computed using computer-vision or image processing techniques. Examples of features are hue, saturation ... texture measures ... shape measures... Some of these features may be computed globally, i.e. over an entire image, and some are local, i.e. computed over a small region in the image'.

Thus, the 'visual senses' in Jain et al. relate to the appearance of objects whereas the 'visual aspects' of claim 16 relate to the orientation of an object within frames. The method of claim 16 is, therefore, novel over the Jain et al. patent.

In order to anticipate a claim, each and every element as set forth in the claim must be described in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of California*, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Furthermore, the identical invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 9 U.S.P.Q.2d 1913, 1920 (Fed. Cir. 1989).

In view of the deficiencies outlined above, Applicants respectfully submit that the instant rejection should be withdrawn.

Issues Under 35 U.S.C. § 103

Claims 9-10 and 17-21 are rejected under 35 U.S.C. § 103 as allegedly being obvious over Jain et al., in view of Crabtree et al., US Patent Number 6,263,088.

In setting forth the standard for conducting an obviousness analysis the Supreme Court, in Graham v. John Deere Co., 383 U.S. 1, 13-14 (1966), held that the obviousness analysis begins with several basic factual inquiries: "[(1)] the scope and content of the prior art are to be determined; [(2)] differences between the prior art and the claims at issues are to be ascertained; and [(3)] the level of ordinary skill in the pertinent art resolved. 383 U.S. at 17. Only following these determinations can the objective determination of obviousness can occur. M.P.E.P § 2141 states that the standard must be applied in each and every case. (Emphasis in original).

In the present case, the Graham factors were plainly not applied. At a minimum, the scope and content of the prior art as a whole was clearly not determined, and the level of ordinary skill in the art was not resolved. The rejection summarily states that it would have been obvious to modify the prior art to arrive at the claims. There was no objective, technically supported reasoning that the Jain et al. combined with selected portions of Crabtree et al., when viewed as a whole, would suggest the desirability (or even ability) in making the presently claimed invention.

Thus, a *prima facie* case of obviousness has clearly not been established. In view of the failure of the Office Action to establish a *prima facie* case of obviousness the burden of going forward has not been allocated to the Applicant. Please note at least the following recent Board of Appeals decisions concerning the Office's necessity to first make a proper *prima facie* case of evidence before rejecting a claim: *Ex Parte Katoe et al.*, Appeal 20071460, Decided May 29, 2007; *Ex Parte Owlett*, Appeal 20070644, Decided June 20, 2007; *Ex Parte Erkey et al.*, Appeal 20071375, Decided May 11, 2007.

Nonetheless, when properly viewed in light of the Graham factors, Applicants respectfully submit that it would be clear one of ordinary skill in the art would reach a conclusion contrary to that set forth in the Office Action.

The Jain et al. patent is discussed above. It discloses the use of a query-level, semantics-based approach to object retrieval (column 9 lines 24 to 36, and column 11 lines 19 to 23). The user's query is parsed into a query structure (column 11, line 2), which is passed to a victionary (column 11 line 20), which returns an 'equivalent query synonym structure, comprising feature vectors' (column 11, line 22). The invention disclosed in Jain et al. allegedly performs 'semantic query processing' wherein 'the system transforms the user's original term ... to a set of equivalent queries, and internally executes all the equivalent queries before returning the results to the user' (column 7, lines 16 to 20).

On the other hand, the present invention provides a method for object retrieval which is substantially orientation invariant such that all instances of a user-specified object can be retrieved, irrespective of the orientation of the object in the scene' (see the Specification at page 4 line 5 to 6). The present invention does not perform semantic-level processing of the user's

input and thus, the reference and present invention address different problems. As indicated above, Jain et al. fail to disclose or suggest the invention as currently claimed.

The Office Action cites Crabtree et al. as a secondary reference, alleging that the reference could be combined with that of Jain et al. However, as Jain et al. teaches away from the present invention, one of ordinary skill in the art would not be motivated or believe it practical to combine the teachings of Jain et al. with the secondary reference, or any other known work to arrive at the invention as currently claimed.

Furthermore, while Crabtree et al. addressee the problem of tracking objects within multiple frames of a moving picture, Crabtree et al. does not consider the issue of 'viewpoint' (or 'orientation') of the object being tracked and does not associate a plurality of different 'visual aspects' with the objects in the frames.

Accordingly, Applicant respectfully requests that this rejection be withdrawn.

Additionally, claims 9-10, and 17-21 are dependent on claims 1 or 16, which should be allowable based on the above amendment and discussion. Based on their dependency on an allowable claim, claims 8-13 should be allowable as well.

From the foregoing, further and favorable reconsideration of the claims in the form of a Notice of Allowance is requested and such action is believed to be in order.

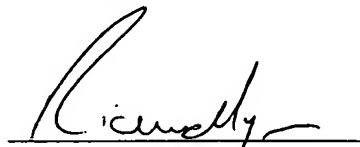
Petition for an Extension of Time

Pursuant to 37 C.F.R. §§ 1.17 and 1.136(a), Applicants hereby petition for a three-month extension of time for filing a response to the outstanding Office Action. The extension fee in the amount of \$525.00 is filed herewith.

From the foregoing, further and favorable reconsideration in the form of a Notice of Allowability is requested, and such action is believed to be in order.

If there are any questions concerning this amendment, or the application in general, the Examiner is respectfully urged to telephone the undersigned at the number listed below.

Respectfully submitted,



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